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LAND USE ANALYSIS

LANDIS
NORTH CAROLINA

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LAND USE ANALYSIS - TOWN OF LANDIS, NORTH CAROLINA

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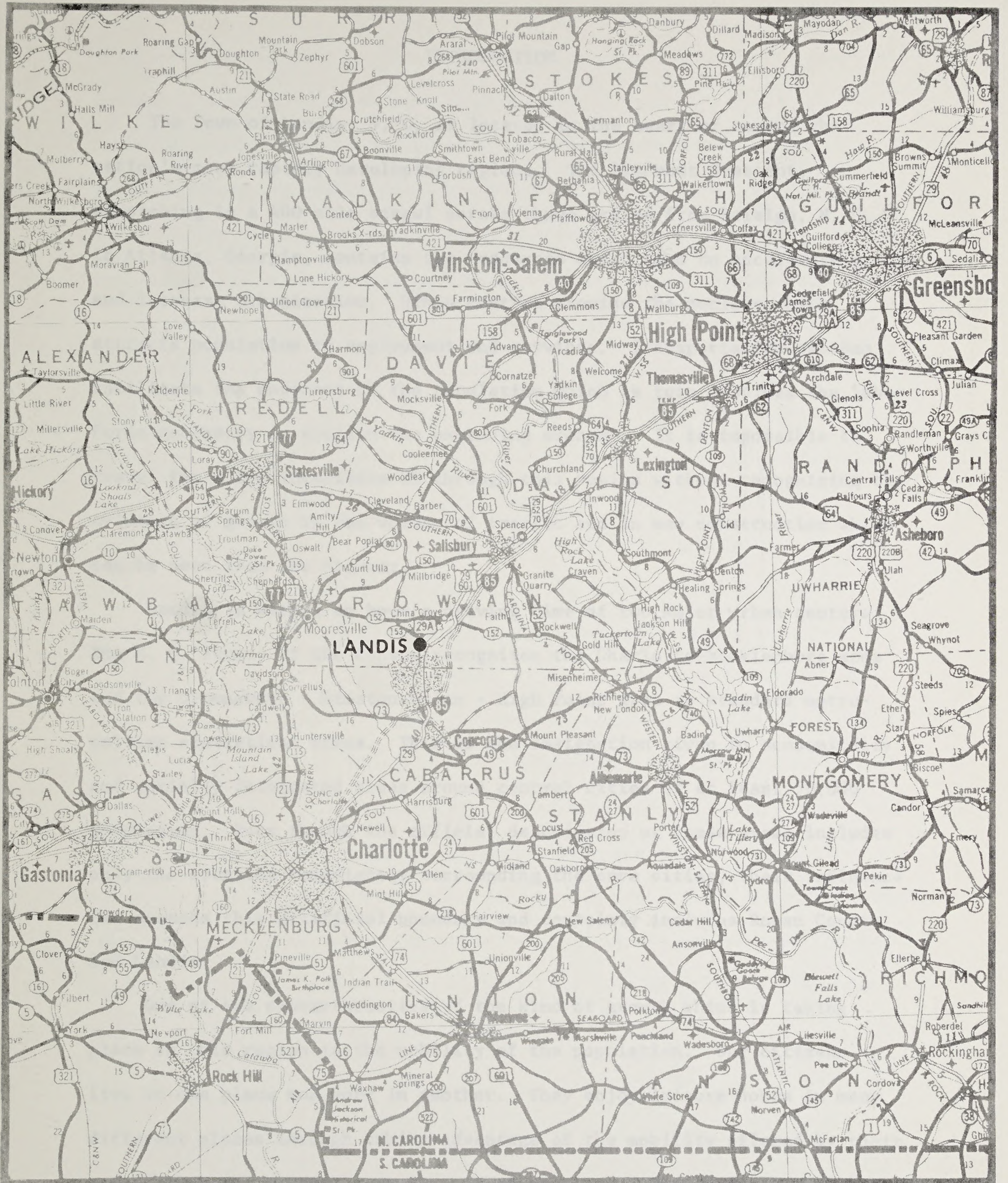
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REGIONAL SETTING

INTRODUCTION

The Town of Landis, N. C. is located in the heart of one of the nation's most rapidly developing regions. The Piedmont Crescent, stretching in a 400 mile sprawl across three states from Raleigh, N. C. to Atlanta, Georgia, contains the resources which tend to accelerate growth and increase urbanization. Urban centers provide the nucleus which attracts population to employment and services. Transportation systems facilitate the movement of the population which in turn provides the labor force necessary to sustain the expanding economy. It is impossible to travel far along Interstate 85 through this region without recognizing the evidence of growth in the volume of traffic and in new construction which can be seen from the highway.

Landis is within an hour's driving time of two major urban centers. The U. S. Bureau of the Census recognizes the Charlotte-Mecklenburg area and the Greensboro - Winston-Salem - High Point area as standard metropolitan statistical areas. This is the designation given to economically and socially integrated areas around central cities of at least 50,000 population. Even though the official description of these areas includes only the counties immediately surrounding the core cities, their influence far exceeds this artificial boundary and certainly includes Rowan County and Landis.

One of the characteristics of the kind of growth which is taking place in this region is the mobility of the population. Our citizens live in one place and work in another. They enjoy leisure hours in many different places through taking advantage of the mobility offered by their automobiles and an efficient network of highways. The 1970 census indicated

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that approximately 38% of the workers who list Rowan County as a place of residence actually work outside the county.

The population that is mobile is also highly selective. The attractions of good wages and the variety of entertainment which can be found in large cities cannot outweigh the desire for a good community environment in which to raise a family. It is exactly the good community environment that makes Landis an attractive place to live. Landis is an active participant in the growth affecting the Piedmont Crescent through providing the resources of excellent services at a reasonable cost in a small town atmosphere while being readily accessible to the larger urban centers. This quality of life which Landis provides is probably the town's major resource. It is a resource which must, however, be guarded and preserved carefully to prevent its being destroyed by unguided and uncoordinated piecemeal development. The development and growth taking place in and around Landis is evident in the information from the 1970 census. The population of Landis increased approximately 30% from 1960 to 1970 and the number of housing units increased in the same period approximately 47%. China Grove Township, including Landis and North Kannapolis, has a population density of approximately 585 persons per square mile which is rapidly approaching urban density. Landis is now the third largest town in Rowan County and China Grove Township is one of the most rapidly growing townships in the county, having increased in population by approximately 1,358 persons from 1960 to 1970.

OBJECTIVES

In order to better evaluate the impact of recent development on Landis, the Landis Planning Board began an inventory and analysis of the major uses of land in Landis and in the area within one mile of the town limits. This study was made for them by the staff of the Rowan Regional Planning Board in an attempt to present information on patterns of land use and vacant land which would enable the people of Landis to identify significant development trends since the last land use survey in 1964 and to provide a base of information on which to make decisions to guide future development.

The comprehensive planning program for Landis began with a land use survey in 1964. Based on that study and a subsequent land development plan, Landis adopted a zoning ordinance and subdivision regulations to be enforced within the town limits and in the one mile extraterritorial area. Experience with enforcement of zoning outside the town limits indicated that a more extensive program than the town could economically justify would be required to effectively administer extraterritorial jurisdiction. This orientation changed the focus of the study area considerably and required an adjustment in the objectives to be sought in this update of land use analysis. The 1964 land use survey considered a very large area divided into smaller study areas in order to delineate those areas which would require further study. Since the division into study areas for the 1964 study was made without consideration of existing political boundaries, it became one of the major objectives of this study to better differentiate between the development taking place inside Landis and that occurring within the one mile extraterritorial area. Another objective of this

study was to correlate available data from the 1970 census on population and housing to existing development. This suggested a third major objective which was to provide a base of data to be used as reference material in continuing a comprehensive planning program for Landis.

PHYSICAL CHARACTERISTICS

The piedmont area of North Carolina is typified by rolling hills, meandering streams and broad, fertile valleys. The area surrounding Landis is characteristic of the piedmont region. Located in the southern part of Rowan County, Landis is about one mile west of Interstate 85 on U. S. Highways 29 and 601 approximately 25 miles north of Charlotte, 15 miles southwest of Salisbury and about 60 miles southwest of Greensboro. The mainline of the Southern Railway roughly bisects Landis from northeast to southwest following Central Avenue. Significant for development is the fact that Landis and its planning area lie on the ridge separating two major drainage basins, the Yadkin River drainage basin and the Rocky River drainage basin. Natural flow for the major portion of Landis is generally south to the Irish Buffalo-Coldwater sub-basin of the Rocky River. Natural flow for the northwest portion of Landis from a line which approximately follows U. S. Highway 29-A and N. C. Highway 153 from their intersection is generally north into the Grants Creek sub-basin of the Yadkin River.

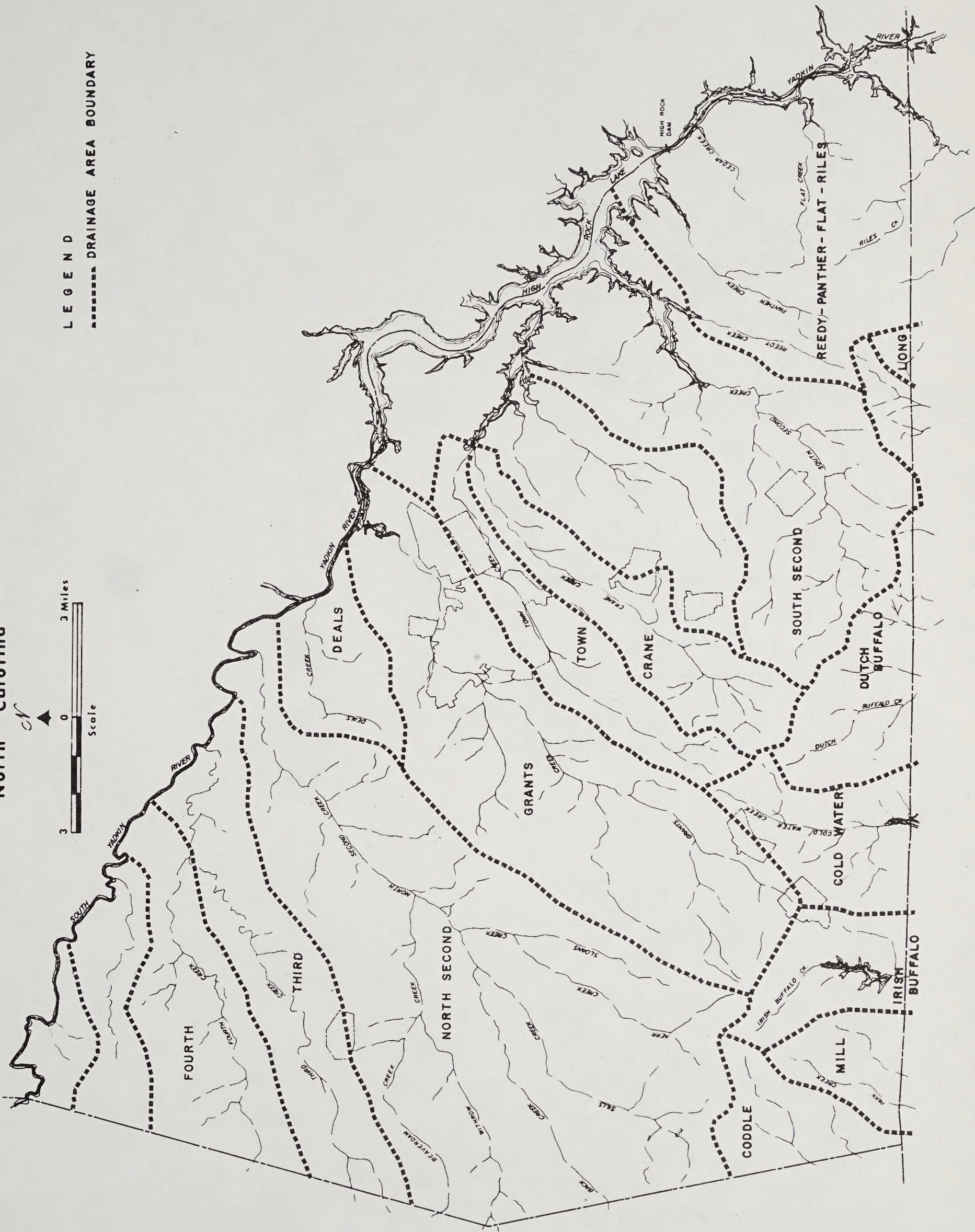
The U. S. Department of Agriculture generalized soils map for Rowan County indicates that Landis and the majority of its planning area lie within the Cecil-Pacolet soil association. This association is characterized by gently sloping well-drained soils with sandy loam surfaces over firm clay sub-soils. The major soils of this association have moderate limitations for non-agricultural use such as septic tank fields, foundations and road construction. Some areas in this association are flat enough that developments or areas of concentrated housing with individual septic tanks and bored wells may have a problem with sewage disposal and well contamination.

ROWAN COUNTY
North Carolina

DRAINAGE BASINS



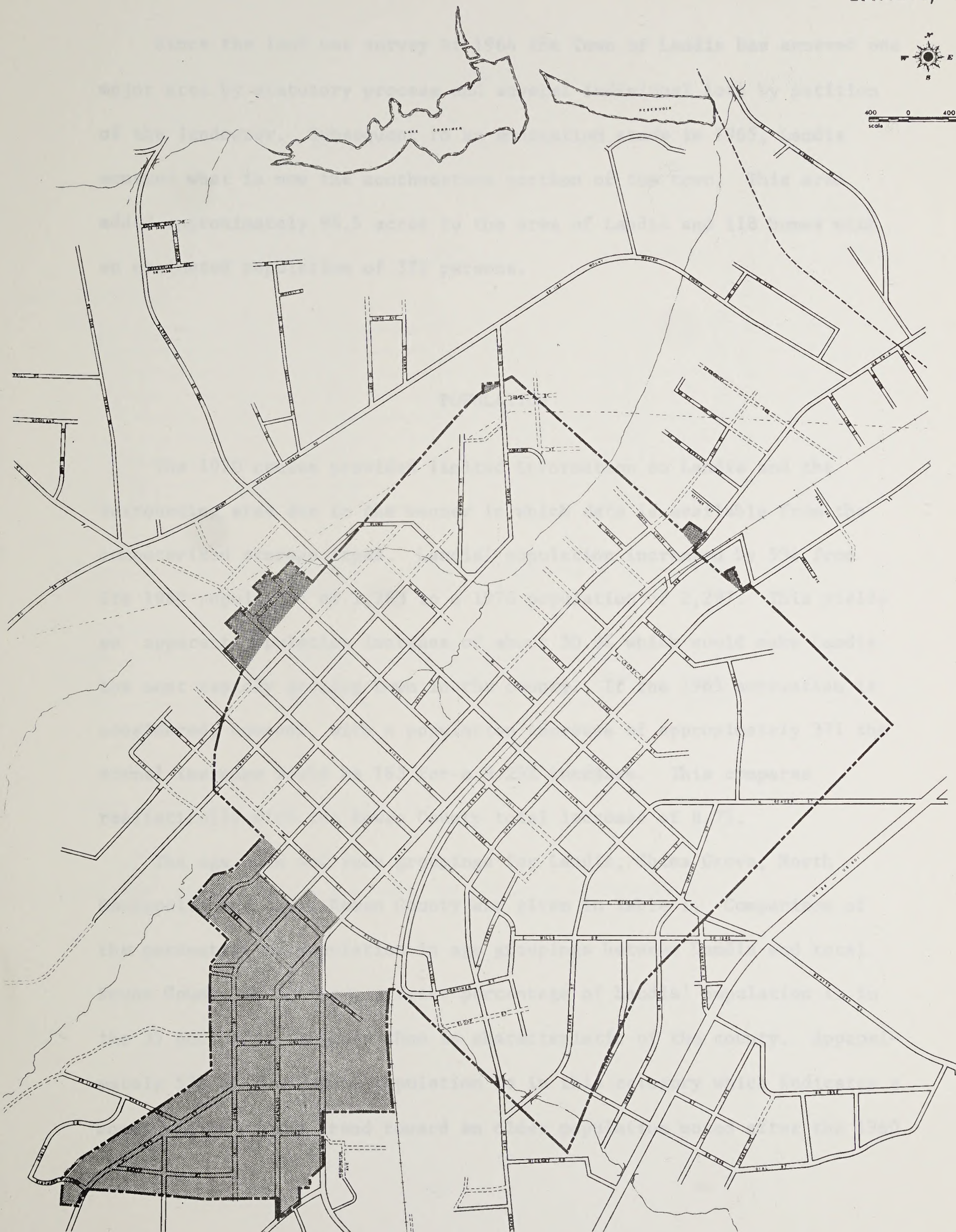
LEGEND
----- DRAINAGE AREA BOUNDARY



ANNEXATION

SINCE 1964

LANDIS, N. C.



ANNEXATIONS

Since the land use survey of 1964 the Town of Landis has annexed one major area by statutory process and several individual lots by petition of the landowner. Subsequent to an annexation study in 1965, Landis annexed what is now the southwestern portion of the town. This area added approximately 98.5 acres to the area of Landis and 118 homes with an estimated population of 371 persons.

POPULATION

The 1970 census provided limited information on Landis and the surrounding area due to the manner in which data is available from the computerized storage tapes. Landis' population increased by 534 from its 1960 population of 1,763 to a 1970 population of 2,297. This yields an apparent population increase of about 30.3% which would make Landis the most rapidly growing town in the county. If the 1965 annexation is considered, however, with a population increase of approximately 371 the normal increase would be 163 for a 9.25% increase. This compares realistically with the Rowan County total increase of 8.7%.

The age, sex and race groupings for Landis, China Grove, North Kannapolis and total Rowan County are given in Table 1. Comparison of the percentage of population in age groupings between Landis and total Rowan County indicates a greater percentage of Landis' population is in the 35 and older category than is characteristic of the county. Approximately 53% of the Landis population is in this category which indicates a continuation of the trend toward an older population noted after the 1960

TABLE 1

AGE, SEX, AND RACE CHARACTERISTICS

	<u>China Grove</u>	<u>Landis</u>	<u>Kannapolis*</u>	<u>Rowan County (Total)</u>
AGE GROUPINGS				
Under 6	157 (8.8%)	187 (8.1%)	3,729 (10.3%)	8,223 (9.1%)
6 - 13	252 (14.1%)	313 (13.6%)	5,558 (15.3%)	13,296 (14.8%)
14 - 18	137 (7.6%)	183 (7.9%)	3,135 (8.6%)	8,473 (9.4%)
19 - 24	132 (7.4%)	172 (7.5%)	3,153 (8.7%)	8,381 (9.3%)
25 - 34	216 (12.1%)	233 (10.1%)	4,512 (12.4%)	10,434 (11.6%)
35 - 44	218 (12.2%)	310 (13.4%)	4,321 (11.9%)	10,951 (12.2%)
45 - 54	231 (12.9%)	325 (14.1%)	4,854 (13.4%)	11,853 (13.2%)
55 - 64	235 (13.1%)	311 (13.5%)	4,137 (11.4%)	9,473 (10.5%)
65 and over	210 (11.8%)	273 (11.8%)	2,894 (8.0%)	8,951 (9.9%)
SEX GROUPINGS				
Male	814 (45.5%)	1,072 (46.5%)	17,410 (48.0%)	43,562 (48.4%)
Female	974 (54.5%)	1,235 (53.5%)	18,883 (52.0%)	46,473 (51.6%)
RACE GROUPINGS				
White	1,712 (95.8%)	2,282 (99.4%)	31,986 (88.1%)	75,521 (83.9%)
Black	70 (3.9%)	13 (0.6%)	4,246 (11.8%)	14,325 (15.9%)
Other	6 (0.3%)	2 --	61 (0.1%)	189 (0.2%)

Source: Bureau of the Census, 1970

*Includes both the Rowan and Cabarrus portions of Kannapolis

census. The composition of the population has a direct bearing on the planning process in such areas as community facilities programming, housing needs, school and recreation requirements and labor force.

The trend toward a decreasing population has been halted in Landis but the preponderance of citizens in the older age groupings indicates that the growth is occurring due to in-migration rather than through expanding families.

UTILITIES

The pattern of urban development is largely set by the availability of urban services. Electric power, water, sewage disposal, natural gas, telephone, and, to an increasing degree, solid waste disposal are necessary elements of modern life which we are unwilling to do without. Where extensive development takes place without the major urban services critical health problems soon arise.

The Public Service Company of North Carolina provides natural gas for the extreme southern and southwestern sections of Rowan County including Landis and vicinity. Residents of Landis, China Grove, North Kannapolis and surrounding areas are provided with telephone service by the Concord Telephone Company. They estimate about 10,000 telephones in service in the portion of Rowan County which they cover.

The Town of Landis operates its own electrical distribution system covering the area within the town limits and a small area outside. The town purchases electricity from Duke Power Company at wholesale rates for resale to residential, commercial and industrial customers. The Town of Landis also sells electricity to Roselle Light Company which services customers primarily in and around the area which was annexed in 1965. Electricity is available to the remainder of the planning area from Duke Power Company.

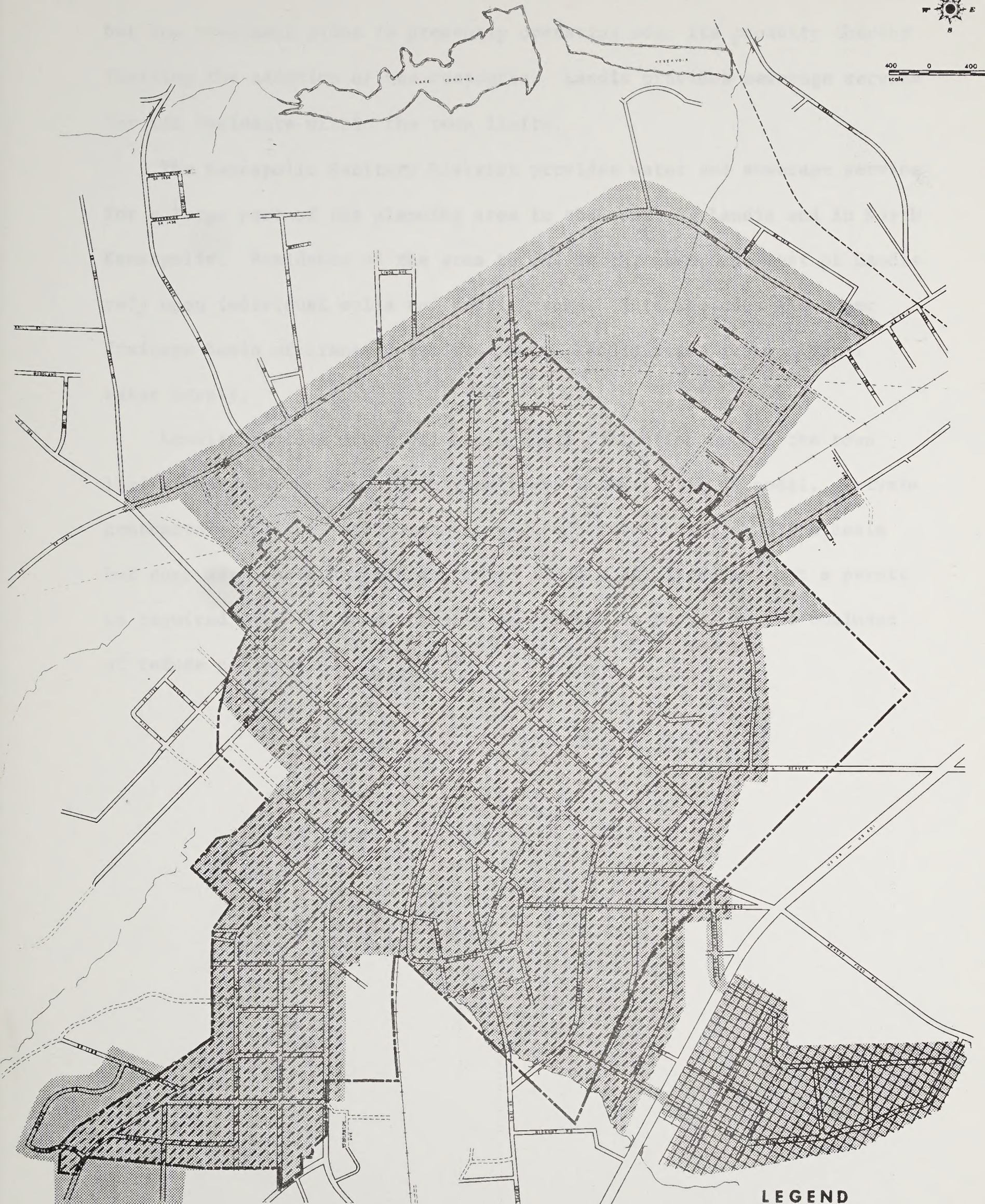
The Landis water system serves all customers within the town limits and provides water for some areas outside. The source of Landis water supply is surface water which is collected in two reservoirs, Lake Corriher and Lake Wright. The raw water supply is sufficient for the town's needs

WATER AND SEWERAGE SERVICE AREAS

LANDIS, N. C.



400 0 400 800
scale feet



LEGEND

-  WATER
-  SEWERAGE
-  BOTH
-  PRIVATE CO.

but the treatment plant is presently operating near its capacity thereby limiting the addition of new customers. Landis provides sewerage service for its residents within the town limits.

The Kannapolis Sanitary District provides water and sewerage service for a large part of the planning area to the south of Landis and in North Kannapolis. Residents of the area to the north, east, and west of Landis rely upon individual wells and septic tanks. This includes the upper drainage basin of Grants Creek from which Landis draws its municipal water supply.

Landis provides municipal solid waste collection within the town limits and uses the Rowan County sanitary landfill for disposal. Private contractors collect solid waste in unincorporated areas on a fee basis but such service is not mandatory and is only regulated in that a permit is required from the county health department to engage in the business of refuse collection.

EXISTING LAND USE

LANDS

NORTH CAROLINA



EXISTING LAND USE

LANDIS

NORTH CAROLINA



400 0 400 800
feet

DECEMBER 1970



LEGEND

- RESIDENTIAL
 - SINGLE FAMILY
 - MULTI-FAMILY
 - TRAILER
- RETAIL
- WHOLESALE
- PUBLIC
- SEMI-PUBLIC
- INDUSTRIAL
 - LIGHT
 - HEAVY

LAND USE ANALYSIS

Methods of Survey

A field survey of Landis and the one mile extraterritorial area was made in December 1970. Rowan County tax maps for the planning area were obtained and field notes were made on them. The existing use of each parcel of land was classified according to major land use category using the system described below.

Residential - all dwelling units or places of residence of individuals, families or households including the following sub-classifications:

- (a) Single Family - one family detached structure
- (b) Multi-Family - a structure or structures in which two or more families or individuals reside, including duplexes, apartment buildings, rooming houses and group housing
- (c) Trailer - a mobile home, modular or other non-conventionally constructed dwelling unit

Commercial - establishments supplying commodities or services to the general public including the following sub-classifications:

- (a) Retail - primary and secondary retail facilities, convenience retail, consumer services, repair and professional services including offices
- (b) Wholesale - establishments selling commodities in large quantities primarily to retailers

Public - establishments and land used and supported by the inhabitants of a governmental unit including schools, municipal offices and facilities, parks and playgrounds

Semi-Public - establishments and land utilized for public purposes but not necessarily open to the general public including churches, private schools, lodges, fraternal organizations and institutions

Industrial - establishments and land engaged in the manufacture, processing, production or storage of commodities in bulk, including:

(a) Light Industrial - manufacturing, processing, or storage which does not create excessive noise, fumes, odors, or dust which would be detrimental to neighboring uses. Textile manufacturing and processing, machine shops, construction equipment storage yards and trucking terminals are included in this category

(b) Heavy Industrial - includes such uses as automobile wrecking yards, bulk storage or processing of volatile or dangerous materials, meat packing plants and similar enterprises

Transportation - land used as the right-of-way for streets, highways and railroads

Vacant - unimproved land and land used for agricultural purposes

The structural condition of residences was included in the data gathered during the field survey. Structures were classified as basically

standard, which included those in need of some minor maintenance, or sub-standard to indicate those structures which would require major repair or extensive modification to continue their usefulness.

A base map of the planning area was prepared at a scale of 1" = 400' utilizing Rowan County tax maps and aerial photographs to provide locations of property boundaries and major physiological features. The data from field maps was transferred to the base map and coded by a pattern to indicate the nine categories of land use. Each individual parcel was then measured and its area computed in order to determine the acreage in each land use category.

The resulting acreage figures were analyzed to provide a picture of the existing development within the town limits, in the one mile extra-territorial area, and in the total planning area. The pattern of development was studied by the Planning Board and comparisons were made between Landis and other small towns in Rowan County using national average percentages of land in use as a reference. National average figures were derived from D. H. Webster's Urban Planning and Municipal Policy.

Characteristics of Land Use - Landis

Table 2 shows the tabulated information for each category of land use within the corporate limits of Landis as they existed at the time of survey. The total number of acres in each category is given as well as the relationship between the individual category of land use and the amount of developed land in the town limits and the total acreage within the town limits.

TABLE 2

LANDIS LAND USE ANALYSIS

Inside Corporate Limits

<u>Category</u>	<u>Acres</u>	<u>Percent of Total Acres</u>	<u>Percent of Developed Land</u>	<u>National Average for Developed Land</u>
Residential	319.70	40.7%	58.2%	40%
Commercial	9.92	1.3%	1.8%	2 - 5%
Public/Semi- Public	37.54	4.8%	6.8%	10 - 20%
Industrial	33.83	4.3%	6.2%	10 - 15%
Transportation	148.54	18.9%	27.0%	
Roads	135.87	17.3%	24.7%	32%
Rail	12.67	1.6%	2.3%	
Total Developed Land	549.53	70.1%		
Total Vacant Land	234.51	29.9%		
TOTAL ACREAGE	784.04			

Of the 784 acres of land in the corporate limits of Landis, over 70% is developed with only 234 acres of vacant land. Most of the vacant land is in individually owned lots scattered throughout the town. The only significantly large undeveloped tracts are the flood plain along the headwaters of Grants Creek in the northwestern quadrant of town and several tracts over three acres in size in the northeast quadrant of town. The northeast area is difficult to develop economically due to the necessity of using lift stations and force mains to tie the area into municipal sewerage facilities.

The residential character of Landis is reflected in the relatively high percentage (58.2%) of developed land in residential use. With 815 occupied housing units in Landis, the ratio of persons per dwelling unit is only 2.8 whereas in 1960 the ratio was 3.17. This declining figure reinforces the conclusion drawn from the population age spread information that the population of Landis is aging.

The appearance of the housing in Landis is generally very good. The survey indicated only five dwelling units which were in need of major repair or in a dilapidated condition. These units were scattered and occurred in neighborhoods where lot sizes were generally smaller and in which the majority of houses were of wood frame construction. The 1970 census indicates that there are 25 dwelling units in Landis lacking one or more plumbing facilities. These units are functionally sub-standard even though regular maintenance may give them the appearance of a standard dwelling unit. The census standard for an overcrowded dwelling unit is one having one or more persons per room. By this standard, Landis has 51 overcrowded housing units. Using these measures of housing quality to

determine the extent of sub-standard housing in Landis will result at best in only an estimate of existing conditions. It is likely that there are individual dwelling units which are included in more than one of the categories due to the manner in which the basic data was collected and as a result of non-standard survey techniques. Since less than 10% (81 units) of the housing stock of Landis is involved if there were no duplication between categories, it is reasonable to say that there is no serious concentration of sub-standard housing in Landis. There are only 11 structures classified as multi-family housing units inside Landis.

One factor which contributes to the generally good condition of housing in Landis is the fact that around 75% of the dwellings are owner-occupied as indicated by 1970 census figures. Almost 30% of the owner-occupied housing units were valued for census purposes at \$15,000 or more. Pride of ownership is reflected in good maintenance which is evident in the condition of homes and yards. This is one of the intangible factors influencing community appearance which cannot be measured quantitatively but which has a direct and visible effect on the quality of life in a community.

Commercial land use in Landis accounts for 1.8% of the developed land. The majority of retail activity is concentrated in the center of town along Main Street and Central Avenue which parallel the Southern Railway main line through Landis. Hardware, clothing, food, appliances, furniture, drugs, and a few other primary retail uses are concentrated in the east side of the two blocks along Central Avenue from Garden Street to Mill Street which constitutes the central business district. There are other primary convenience retail establishments scattered south along Main Street in the vicinity of West First Street. Consumer and professional

services are generally confined to the central business district. The variety and quality of commercial facilities in Landis seem fairly consistent with its residential character. The availability within about 15 minutes driving time of the larger shopping centers of either Salisbury or the Concord-Kannapolis area considerably expands the range of choice for the Landis consumer. Landis, however, thereby loses the benefit of tax revenue generated by such out-of-town trade.

Approximately 6.8% of the developed land within the corporate limits is in the public and semi-public categories. By far the largest of the public use category are the elementary and junior high schools located one block west of Main Street between Mill and Rice Streets. The municipal office building and U. S. Post Office on Central Avenue along with a municipal park in the western side of town and the fireman's park in the eastern half of town account for the remainder of land in public use. Churches and the American Legion Building which is used as a community meeting center occupy the majority of land in the semi-public category. Textile manufacturing and processing occupies almost all of the approximately 33.83 acres of land in the industrial use category in Landis. This accounts for 6.2% of the developed land inside the corporate limits. The largest of these light industries are located near the center of town on the west side of the railroad in two dual block clusters separated by consumer service uses and South Main Street from West Ryder Street on the north to East Round Street on the south. There is one site in the northwest quadrant of town east of North Meriah Street backed by Grants Creek and another between the eastern town limit and North Upright Street. The industries appear to be good neighbors to the residences and public schools which are adjacent to them. There are no apparent signs of neighborhood deterioration which sometimes occurs in such a mixture of land uses.

Approximately 27% of the developed land in Landis is occupied by street and railroad rights-of-way. The Southern Railroad line through town accounts for about 8.5% of the 148.54 acres of transportation use with the remaining 135.87 acres in streets. The thoroughfare system for Landis and the surrounding area is the subject of an intensive study by the Advanced Planning Division of the State Highway Commission. It would be premature to draw any conclusions about the system until the study is complete. From the available data published in a preliminary Origin and Destination Study in 1970 it appears that Landis' transportation system is functionally adequate to meet the demands of the public. There are probably some operational and maintenance improvements which could increase the safety and capacity of through streets such as Main Street and Ryder Avenue and such heavily traveled streets as West Rice Street, but it is doubtful if any major changes in thoroughfare pattern will be proposed.

Characteristics of Land Use - Extraterritorial Area

The area within one mile of the municipal limits of Landis comprises some 4,682.52 acres. Of this total, approximately 3,123.18 acres or 67.7% is undeveloped as indicated in Table 3. The boundary of this area to the northeast of Landis is restricted to one-half mile due to the overlap of jurisdictions between Landis and China Grove.

The vacant land mostly consists of agricultural tracts with only a few clusters of subdivided parcels to the northwest and primarily to the south of Landis. In a pattern that is fairly common to Rowan County and most of the urbanizing Piedmont, the vacant agricultural land is being developed one lot at a time along the rural roads. This development is

TABLE 3

LANDIS LAND USE ANALYSIS

One-Mile Extraterritorial Area

<u>Category</u>	<u>Acres</u>	<u>Percent of Total Acres</u>	<u>Percent of Developed Land</u>	<u>National Average for Developed Land</u>
Residential	793.88	17.0%	50.9%	40%
Commercial	78.46	1.7%	5.0%	2 - 5%
Public/Semi- Public	316.32	6.7%	20.3%	10 - 20%
Industrial	12.23	0.3%	0.8%	10 - 15%
Transportation	358.45	7.7%	22.9%	
Roads	334.80	7.2%	21.4%	32%
Rail	23.65	0.5%	1.5%	
Total Developed Land	1,559.34	33.3%		
Total Vacant Land	3,123.18	66.7%		
TOTAL ACREAGE	4,682.52			

taking place in spite of the fact that the soils are generally unsuited for septic tanks. The resulting development is on non-standard lots with water supply and sewage disposal reliable only so long as the density of development remains low. The area south of Landis within the Kannapolis Sanitary District is being developed on a more orderly basis since the district imposes restrictions on the kind of development allowed. There is no overall direction to this development, however, and such urban services as solid waste collection and street lighting and maintenance are not coordinated.

Except for the general lack of utilities, almost all the vacant land in the extraterritorial area is suitable for development with no major flood plains or other serious physiological barriers. The pressure for residential development is being felt as more people seek the kinds of quiet, rolling countryside sites that are available in the areas to the east of Landis between U. S. 29-601 and Interstate 85 and to the west of town between the city limits and Cannon Farm Road.

There are several vacant tracts of land south of the municipal limits between the Southern Railway and U. S. 29-601 which are large and level enough to be attractive to industrial users. The availability of both rail and nearby interstate highway connection is a combination much sought by industry.

The remaining 1,559.34 acres of the outside area is developed with approximately 50.9% of the developed land in residential use. There are 1,513 dwelling units in the extraterritorial area. Only 12 of these are identified as multi-family units which is less than 1% of the housing stock. The most accurate census data available for the area is the 1970

information for China Grove Township which encompasses the entire planning area. Since the average number of persons per household in the township is 2.88, the population of the extraterritorial area is estimated to be 4,357.

Sixty-one dwelling units, around 4% of the total, in this area were identified as being dilapidated beyond the scope of economical repair. Unlike the situation inside Landis, these dilapidated units were located in areas of deteriorating housing conditions. There are three major clusters of unsound dwelling units in the extraterritorial area. One of these clusters is located to the northeast of Landis just off of U. S. 29A. The small lots and crowded conditions emphasize the deterioration of the neighborhood. Surrounding houses, while not dilapidated, are almost all in need of extensive repair. The area to the north of the intersection of Flatrock Road and Mr. Moriah Church Road contains a considerable number of dilapidated dwellings interspersed with well maintained homes. Lot sizes in this vicinity are large enough so that there is not the crowded and cramped effect which is predominant in the other deteriorating neighborhoods. There are several apparently well built brick veneer homes in this area which show the need for immediate maintenance to prevent their decay beyond the point of economical repair. The other significant area displaying signs of deterioration is south of the Landis corporate limits north of 22nd Street between Cannon Boulevard and West "A" Avenue. The area is characterized by small, poorly maintained lots with deteriorating and dilapidated wood frame houses. Unpaved, narrow streets contribute to the neglected appearance of the area. A few sub-standard dwelling units are scattered elsewhere throughout the extraterritorial planning area but the seriously blighted neighborhoods are fairly well defined.

The majority of the dwelling units in the extraterritorial area are well maintained single family homes on fairly large lots. The ratio of dwelling units per new residential acre is 1.9 which indicates an average lot size of about half an acre. Brick veneer homes predominate on individual lots rather than in established subdivision. This individual development without conformance to a thoroughfare plan or minimum development standards is resulting in some homes being isolated on dead end streets and streets without sufficient right-of-way width for state maintenance. There is also the possibility of some lots being completely cut off without access to a practical traffic circulation system.

Commercial land use is concentrated primarily along Cannon Boulevard (U. S. 29-601) and U. S. 29A through the extraterritorial area. Approximately 5% of the developed land is in commercial use. The majority of these establishments are service stations, restaurants or drive-in restaurants and used car sales lots. There are a few small businesses scattered elsewhere in the area, typically automobile repair garages, beauty parlors, and neighborhood grocery stores.

The 316.32 acres in the public/semi-public land use categories account for approximately 20.3% of the developed land in the extraterritorial area. Aside from the school off Mr. Moriah Church Road, the only land in the public land use category is owned by the Town of Landis. These parcels include the water storage tank on West Ryder Avenue and the sewage treatment plant and the water treatment plant located along Grants Creek to the north of town. The largest land user in the semi-public category is the golf course located in the southwestern part of the planning area around Kannapolis Lake. The remaining semi-public uses are mostly churches which are distributed throughout the planning area and a few fraternal organizations.

There are only 12.23 acres of land in the industrial use category which covers 0.8% of the developed land in the outside area. This includes junkyards, a meat packing plant and a concrete plant among other uses.

Transportation uses account for approximately 358.45 acres or 22.9% of the developed land. The Southern Railroad mainline through the area covers only about 6% of the total transportation acreage with the remainder in streets and roads. Most of the residential streets in the outside area are paved with approximately 60 foot rights of way. The major radial and through streets and roads are, of course, paved. The portion of the outside area with the worst street conditions is that described as having the poorest housing conditions to the south of the Landis corporate limits.

SUMMARY

Table 4 shows the acreages and percentages in each land use category for the combined planning area. The national average figures are given to provide a basis of comparison only, not to depict an ideal balance of development to strive for. A more realistic comparison of level of development can probably be made between Landis and other small towns in Rowan County for which land use information is available. Those figures are shown in Table 5.

Several general characteristics of the total Landis planning area can be observed by comparison with the national figures. It is readily apparent that there is considerably more residential development around Landis than is typical for the nation. Commercial use seems to be fairly typical as do land uses in the public and semi-public categories. There is much less land in industrial and transportation use in the Landis area which can be partially attributed to the unusually high percentage of large lot residential development.

Landis appears to be comparable to the towns of East Spencer, Granite Quarry and Spencer in the percentage of land residentially developed. All four towns are higher in this respect than the national average with Landis highest but closely followed by Granite Quarry. Commercial development in each of the towns appears to be related to population size. The variant in this category is Granite Quarry which has experienced considerable strip commercial development along U. S. 52 due to its proximity to Salisbury. Landis has a comparable amount of land in the public and semi-public categories to Spencer and East Spencer. Granite Quarry is atypical because of a single large semi-public recreation area.

TABLE 4

LANDIS LAND USE ANALYSIS

Total Planning Area

<u>Category</u>	<u>Acres</u>	<u>Percent of Total Acres</u>	<u>Percent of Developed Land</u>	<u>National Average for Developed Land</u>
Residential	1,113.58	20.4%	53.8%	40%
Commercial	88.38	1.6%	4.2%	2 - 5%
Public/Semi- Public	353.86	6.5%	16.7%	10 - 20%
Industrial	46.06	0.8%	2.2%	10 - 15%
Transportation	506.99	9.3%	24.0%	
Roads	470.67	8.6%	22.3%	32%
Rail	36.32	0.7%	1.7%	
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Total Developed Land	2,108.87	38.6%		
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Total Vacant Land	3,357.69	61.4%		
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TOTAL ACREAGE	5,466.56			
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TABLE 4. LAND USE ANALYSIS

Land Use Analysis

Category	Area	Percent of Total Area	Percent of Total Area	Percent of Total Area
Residential	1,117.34	20.97	22.32	407
Commercial	88.38	1.67	4.77	1 - 35
Industrial	353.81	6.73	16.75	10 - 307
Public	10.00	0.19	2.20	10 - 132
Transportation	200.00	3.82	20.00	
Open Space	477.41	9.06	22.32	207
Water	22.22	0.42	1.17	
Total Developed	1,909.82	36.67		
Total Open Space	2,587.98	51.43		
Total Area	4,497.80			

TABLE 5	COMPARATIVE LAND USE COMPOSITION OF DEVELOPED LAND				
	Landis (pop.) (2,297)	East Spencer (2,217)	Granite Quarry (1,344)	Spencer (3,075)	National Average for Developed Land*
Residential	58.2%	48.9%	54.8%	43.9%	40%
Commercial	1.8%	1.6%	2.1%	4.1%	2 - 5%
Public/Semi-Public	6.8%	5.1%	14.2%	7.4%	10 - 20%
Industrial	6.2%	23.3%	6.3%	0.9%	10 - 15%
Transportation	27.0%	21.0%	22.6%	43.5%	32%

*Webster, D. N.: "Urban Planning and Municipal Policy"

Landis and Granite Quarry seem to be quite similar in the percentage of developed land in industrial use. The large proportion of industrial land in East Spencer is accounted for by a single large brick manufacturer. The very small proportion of industrial land in Spencer is due to the classification of the town's largest industry, the Southern Railway yards, in the transportation category. This classification also explains the only major deviation in transportation land use among the four towns.

The quantitative comparison of Landis with other towns in the county points out their similarities in heavy residential development and their economic dependence on large single industries. Other points of similarity are that the majority of the dwelling units in these towns are single family residences with a low number of persons per household and that the populations contain an increasing proportion of older persons.

The future development of Landis and its continued existence as a well balanced residential community depend to a great extent on what is happening outside the town limits. With over 70% of the land inside the corporate limits developed, Landis is left with practically no room to grow. Landis is being encircled by strip residential development in the areas which could be potentially annexed and economically serviced with water and sewer. The present quality of this development on wells and septic tanks would not necessarily encourage inclusion into the town and, in fact, could prove to be too expensive to serve with utilities to warrant its annexation.

As the roads around Landis are stripped, the transportation system becomes inadequate to handle the increased traffic. It becomes more expensive to acquire the necessary right of way to provide connecting

links between what are becoming residential streets instead of country roads. Only about 21% of the developed land in the extraterritorial area is covered by road rights of way while a typical figure for a residential area is over 25%. This is an inadequate street system for an area with over 50% of the developed land in residential use.

In the 1964 land use study, the lack of multi-family dwelling units was noted with the suggestion that this lack of housing which is traditionally occupied by the young, growing family contributes to the increasing out-migration of that vital portion of the population. The housing industry has attempted to fill that gap with the mobile home which is evident on many lots throughout the planning area. This is only a short range solution to the problem however. As the 1970 census figures indicate, the problem is still prevalent and it will continue until an effort is made to provide attractive, reasonably priced housing for the younger worker and his family.

Utilities, transportation and housing are the interconnected concerns which must be addressed in a rational manner in order to maintain the life style that is a vital part of this community. Landis represents a base of experience in planning and execution of plans that is unique in Rowan County. Landis also represents a potential of growth and development that can be managed to the betterment of the entire South Rowan area and ensure the future of Landis as a fine residential community.

links between what are becoming residential areas instead of country

lands. Only about 15% of the developed land is the metropolitan

area is covered by some form of way while a typical figure for a

residential area is over 12%. This is an important aspect of the

area with only 5% of the developed land in residential use.

In the past the study, the lack of multi-family housing units

was noted with the suggestion that this lack of housing which is

essentially occupied by the young, growing family members of the

population, has resulted in that vital portion of the population. The

housing industry has attempted to fill that gap with the multi-family

which is evident in many areas throughout the planning area. This is

only a short range solution to the problem however. As the 1970 census

figures indicate, the problem is still prevalent and it will continue

until an effort is made to provide attractive, reasonably priced housing

for the younger worker and his family.

Wellness, transportation and housing are the interconnected concepts

which must be addressed to a national level in order to maintain the

high standards of a vital part of this community. Landis represents a

point of experience in planning and execution of plans that is unique in

South County. Landis also represents a potential of growth and develop-

ment that can be brought to the forefront of the entire South County area

and provide the future of Landis as a true residential community.

